

In the claims:

1. (currently amended) A computer system comprising:
 - at least two CPUs;
 - shared memory, which is shared by said at least two CPUs; and
 - at least one shared system resource accessible to said at least two CPUs,
 - said shared memory having therein a resource locking table, comprising memory elements, each of said memory elements designated for being written to by only one of said at least two CPUs, and
 - each CPU of said at least two CPUs having a corresponding memory element for each of said one shared system resource to which it has access,
 - wherein each of said at least two CPUs is communicatively interconnected with said shared memory and said at least one shared system resource, and
 - wherein said resource locking table is operative by each of said at least two CPUs, and
 - wherein said communicative interconnection is across a communications bus wherein providing a single read operation is capable of atomically reading at least a collection of said memory elements, said collection comprising at least two memory elements.

2. (deleted)

3. (deleted)

4. (deleted)

5. (currently amended) A computer system comprising:

at least two CPUs;

shared memory, which is shared by said at least two CPUs; and

at least one shared system resource accessible to said at least two CPUs;

said shared memory having therein a resource locking table, comprising memory elements, each of said memory elements designated for being written to by only one of said at least two CPUs, and

each CPU of said at least two CPUs having a corresponding memory element for each of said at least one shared system resource to which it has access,

wherein each of said at least two CPUs is communicatively interconnected with said shared memory and said at least one shared system resource, and

wherein said resource locking table is operative by each of said at least two CPUs, and

wherein any of said at least two CPUs can read a first collection of memory elements in a single transaction, said first collection of memory elements corresponding to requests of received from said at least two CPUs for one of said at least one shared system resources.

6. (currently amended) The computer system according to claim 5, wherein a CPU of said at least two CPUs locks a said at least one shared system resource by executing at least one control commands command to accomplish the steps of:

a. checking a content of said first collection of memory elements of said shared memory and if each memory element of said first collection of memory elements is not clear, waiting for each of said first collection of memory elements to clear;

b. setting the said corresponding memory element corresponding to for each CPU of said CPU at least two CPUs;

c. checking if more than one of said memory elements of said first collection of memory elements is set, and if true then resetting said corresponding memory element corresponding to for each CPU of said CPU at least two CPUs and waiting for each of said memory elements of said first collection of memory elements to reset and repeating the sequence from step a.;

d. accessing said at least one shared system resource corresponding to said first collection of memory elements; and

e. resetting said corresponding memory element, corresponding to said CPU at least two CPUs, of said first collection of memory elements corresponding to said at least one shared system resource.

7. (currently amended) The computer system according to claim 5, wherein a second collection of memory elements corresponds to a group of CPUs.

8. (currently amended) The computer system according to claim 7, wherein a said CPU group locks a said at least one shared system resource by executing at least one control commands command to accomplish the steps of:

a. checking a first content of said second collection of memory elements and, if not clear, waiting for each memory element of said second collection of memory elements to clear;

b. setting the said memory element of said second collection of memory elements corresponding to a desired said CPU group;

- c. checking if more than one of said memory elements of said second collection of memory elements is set, and if true then resetting said second collection of memory element elements corresponding to said CPU group and waiting for each of said memory elements of said second collection of memory elements to reset and repeating the sequence from step a.;
- d. checking a second content of said first collection of memory elements corresponding to said at least one shared system resource and said CPU group and if not clear, waiting for each memory element of said first collection of memory elements to clear;
- e. setting the said corresponding memory element of said first collection of memory elements corresponding to ~~a CPU~~ within said CPU group;
- f. checking if more than one of said memory elements of said first collection of memory elements is set, and if true then resetting said second collection of memory element elements corresponding to said CPU group and waiting for each memory element of said memory elements of said first collection of memory elements to reset and repeating the sequence from step a.;
- g. accessing said at least one shared system resource corresponding to said first collection of memory elements;
- h. resetting said corresponding memory element, corresponding to said CPU group, of said first collection of memory elements corresponding to said at least one shared system resource; and
- i. resetting said corresponding memory element, corresponding to said CPU group, of said second collection of memory elements corresponding to said at least one shared system resource.

9. (deleted)

10. (currently amended) A method for locking a shared system resource for use by a single CPU, the method comprising the steps of:

- a. checking a content of a collection of memory elements of a resource locking table implemented in shared memory and if each memory element of said collection of memory elements is not clear, waiting for each of said collection of memory elements to clear;
- b. setting the said corresponding memory element of said collection of memory elements corresponding to the single CPU;
- c. checking if more than one of said memory elements of said collection of memory elements is set, and if true then resetting said corresponding memory element corresponding to the single CPU and waiting for each of said memory elements of said collection of memory units elements to reset and repeating the sequence said from step a;
- d. accessing the said shared system resource corresponding to said collection of memory elements; and
- e. resetting the said corresponding memory element, corresponding to the single CPU, of said collection of memory elements corresponding to said shared system resource.

11. (previously amended) The method according to claim 10, wherein said shared memory is connected to a PCI bus.

12. (currently amended) A method for locking a shared system resource for use by a single CPU having access to a first and a second collection of memory elements of shared memory, the method comprising the steps of:

- a. checking a first content of said second collection of memory elements and if not clear, waiting for each memory element of said second collection of memory elements to clear;
- b. setting ~~the~~ a corresponding memory element of said second collection of memory elements corresponding to a desired CPU group;
- c. checking if more than one of said memory elements of said second collection of memory elements is set, and if true, resetting corresponding memory element corresponding to said CPU group and waiting for each of said memory elements of said second collection of memory elements to reset and repeating ~~the sequence~~ said checking step from of step a.;
- d. checking a second content of said first collection of memory elements corresponding to said shared system resource and said CPU group and, if not clear, waiting for each memory element of said first collection of memory elements to clear;
- e. setting corresponding memory element of said first collection of memory elements corresponding to a CPU within said CPU group;
- f. checking if more than one of said memory elements of said first collection of memory elements is set, and if true then resetting corresponding memory element corresponding to said CPU group and waiting for each of said memory elements of said first collection of memory elements to reset and repeating ~~the sequence~~ said checking step from of step a.;
- g. accessing the said shared system resource corresponding to said first collection of memory elements;
- h. resetting corresponding memory element, corresponding to said CPU group, of said first collection

of memory elements corresponding to said shared system resource; and

i. resetting said corresponding memory element, corresponding to said CPU group, of said second collection of memory elements corresponding to said shared system resource.

13. (previously amended) The method according to claim 12, wherein said shared memory is connected to a PCI bus.

14. (currently amended) A computer program product for locking a shared system resource for use by a single CPU, the computer program product comprising:

computer readable medium having thereon software instructions for enabling a system, containing at least two CPUs and at least one shared system resource, to perform predetermined operations comprising the steps of:

a. checking a content of a collection of memory elements of a resource locking table implemented in shared memory and if each memory element of said collection of memory elements is not clear, waiting for each of said collection of memory elements to clear;

b. setting the each memory element of said collection of memory elements corresponding to said the single CPU;

c. checking if more than one of said memory elements of said collection of memory elements is set, and if true then resetting said each memory element of said collection of memory elements corresponding to said the single CPU and waiting for each of said collection of memory elements ~~of said collection of memory units~~ to reset and repeating the sequence said from step a.;

d. accessing said shared system resource corresponding to said collection of memory elements; and

e. resetting said each memory element of said corresponding memory elements, corresponding to said the single CPU, of said collection of memory elements corresponding to said shared system resource.

15. (currently amended) The computer software program product according to claim 14, wherein said CPUs at least two CPUs and said shared memory are connected by a PCI bus.

16. (currently amended) A computer program product for locking a shared system resource for use by a single CPU having access to a first and a second collection of memory elements of at least one shared memory, the computer program product comprising:

computer readable medium having thereon software instructions for enabling a system, containing at least two CPUs and at least one shared system resource, to perform predetermined operations, comprising the steps of:

a. checking a first content of said second collection of memory elements and if not clear, waiting for each memory element of said second collection of memory elements to clear;

b. setting the each memory element of said second collection of memory elements corresponding to a desired CPU group;

c. checking if more than one of said memory elements of said second collection of memory elements is set, and if true then resetting said each memory element corresponding to said CPU group and waiting for each memory element of said memory elements of said second collection of memory elements to reset and repeating the sequence from step a.;

d. checking a second content of said first collection of memory elements residing in a resource locking table implemented in said at least one shared memory and further corresponding to said shared system resource and said CPU group and, if not clear, waiting for each memory element of said ~~memory elements of said~~ first collection of memory elements to clear;

e. setting said each memory element of said first collection of memory elements corresponding to a ~~CPU~~ within said CPU group;

f. checking if more than one memory element of said ~~memory elements of said~~ first collection of memory elements is set, and if true then resetting said each memory element corresponding to said CPU group and waiting for each memory element of said ~~memory elements of said~~ first collection of memory elements to reset and repeating the sequence from step a.;

g. accessing the said shared system resource corresponding to said first collection of memory elements;

h. resetting the each memory element, corresponding to said CPU group, of said first collection of memory elements corresponding to said shared system resource; and

i. resetting said each memory element, corresponding to said CPU group, of said second collection of memory elements corresponding to said shared system resource.

17. (currently amended) The computer software program product according to claim 16, wherein said at least two CPUs and said at least one shared memory are connected by a PCI bus.